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Bovatsek et al.

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(54) **TRANSPARENT MATERIAL PROCESSING
WITH AN ULTRASHORT PULSE LASER**

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patent is extended or adjusted under 35
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This patent is subject to a terminal dis-
claimer.

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(58) **Field of Classification Search**

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(57) **ABSTRACT**

A method for scribing transparent materials uses ultrashort
laser pulses to create multiple scribe features with a single
pass of the laser beam across the material, with at least one
of the scribe features being formed below the surface of the
material. This enables clean breaking of transparent mate-
rials at a higher speed than conventional techniques.

15 Claims, 10 Drawing Sheets

